Reply to: "Transarterial therapies for hepatocellular carcinoma (HCC): A long way towards standardization"

To the Editor:

Chemoembolization is an important treatment for hepatocellular carcinoma (HCC) and has been shown to improve survival compared with best supportive care in two randomized controlled trials [1,2]. It is also the current standard of care for intermediate HCC as defined by the Barcelona Clinic Liver Cancer (BCLC) staging system [3]. The commonly used method of "conventional" transcatheter arterial chemoembolization involves intra-arterial infusion of lipiodol mixed with anticancer drugs such as doxorubicin into the feeding artery of the HCC. However, as you are probably aware, various techniques are used in chemoembolization for HCC, but there is a lack of standardization across them [4]. The method used for chemoembolization is different in Eastern, including Korea, and Western countries, and the actual details of the technique vary between interventional radiologists in the same medical center as well as between medical centers in the same country. Therefore, a physician may have difficulty in predicting the therapeutic efficacy of chemoembolization and has a question about that such difference of technical details could result in different outcomes. Combination of sorafenib with chemoembolization might complement such pitfalls of chemoembolization.

In chemoembolization, the gelfoam particles are generally used as the embolic materials that are injected after sufficient infusion of lipiodol mixture into the feeding artery. This maximizes the embolic effect, blocks blood flow into the tumor, and impedes the washout of lipiodol. However, there is a risk of ischemia of the extratumoral liver tissue, resulting in biliary strictures, bile duct cysts and, as known, VEGF surge. We consider that gelfoam particle infusion increases the risk of ischemic complications, and, in our center, we have restricted their use in chemoembolization to help achieve superselection of the feeding artery. We use two different methods for chemoembolization in daily practice. In cases where there are several small nodular type HCC, we try to select the single feeding artery of each tumor, and to achieve complete necrosis of the tumor we use aggressive chemoembolization, referred to as "angiographic subsegmentectomy" [5]. In other cases, we try to minimize normal liver parenchymal damage or ischemic complications by using chemoembolization. The cases in our clinical study [6] included multiple and/or large tumors, and therefore, the superselection of multiple feeding arteries for chemoembolization could not be achieved. If we had used gelfoam particles in these cases, the incidence of ischemic complications might have increased and administration of sorafenib would be more delayed.

We would not expect all chemoembolization treatments to have maximal therapeutic effect because of the reasons described above. Combined treatment with chemoembolization and sorafenib may be an appropriate therapeutic option for these patients.

Conflict of interest

The authors declared that they do not have anything to disclose regarding funding or conflict of interest with respect to this manuscript.

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Fondaparinux (Arixtra*) hepatotoxicity in a 6 year-old child

To the Editor:

Fondaparinux (Arixtra*) is a synthetic pentasaccharide, which selectively binds to antithrombin (AT) and causes a rapid and selective inhibition of Factor Xa [1]. Fondaparinux is effective at preventing [1] and treating [2] venous thrombosis and has a valuable place in the treatment of patients with acute coronary syndrome [3]. Fondaparinux has been reported to be well tolerated and thrombocytopenia has only been reported as isolated occurrences [4]. It does not undergo hepatic metabolism and does not interact with liver function [5]. Liver toxicity induced by fondaparinux has not yet been described. We report a case of acute hepatitis likely related to fondaparinux administration in a 5 year-old child who presented with a left-sided axillary veno-lymphatic malformation diagnosed at 9 days of life.